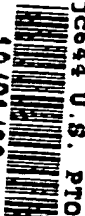


12/01/99



December 1, 1999

**PROVISIONAL PATENT APPLICATION  
UNDER §111(b)**

**Assistant Commissioner for Patents  
Box Provisional Patent Application  
Washington, D.C. 20231**

Sir:

Enclosed for filing is a complete provisional patent application of Whitney Stewart, 3625 Filmore Street, #7, San Francisco, CA 94123, entitled "METHOD AND APPARATUS FOR PROVIDING ONLINE FINANCIAL ACCOUNT SERVICES" including the following documents:

Specification including any claims - 21 pages  
Check No. 100854 for \$150.00 for filing fee

Charge or credit Deposit Account No. 13-3080 with any shortage or overpayment of the above fee. A duplicate of this sheet is enclosed. IN NO EVENT CAN ANY ISSUE FEE FOR ANY PATENT CLAIMING PRIORITY FROM THIS PROVISIONAL PATENT APPLICATION BE CHARGED TO THE DEPOSIT ACCOUNT.

Please address all correspondence to:

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Milwaukee, WI 53202-4108

Respectfully submitted,

Thomas A. Miller  
Reg. No. 36,871

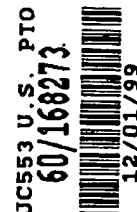
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Appendix B

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A  
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# METHOD AND APPARATUS FOR PROVIDING ONLINE FINANCIAL ACCOUNT SERVICES

## FIELD OF THE INVENTION

5           The invention relates to the provision of financial account services over the Internet and, particularly, to a method and apparatus for opening demand deposit accounts via the Internet.

## BACKGROUND OF THE INVENTION

10           In the usual course of opening a financial account, and particularly a demand deposit account, a consumer currently needs to physically visit the bank, savings and loan, or credit union of choice. The consumer provides sufficient personal information to meet the financial institution's needs, e.g., for risk assessment and identity verification. The consumer must also provide funds to be  
15           used in opening the account. The consumer is then presented with and chooses between various savings and checking account options. The accounts are then "opened" using the consumer's personal information and funds, and the consumer signs a signature card to be used to confirm later transactions. Some accounts can be opened remotely, but these usually involved an exchange of documents and  
20           funds by conventional mail or courier.

          Once an account is established, the consumer can conduct transactions using the account either in person at the financial institution or through a number of remote means such as automatic teller machines, telephone, or the Internet.

## 25           SUMMARY OF THE INVENTION

          The problem with current practices is that the establishment of an account at a financial institution must be done either in person or by the transfer of documents and funds by conventional mail or courier. In particular, the major points of difficulty in establishing an account remotely are threefold: obtaining  
30           initial funding, obtaining a signature card, and providing the consumer with account options without requiring the consumer to visit the financial institution.

          Accordingly, the invention described herein provides a method by which a consumer can establish a financial account electronically, without physically

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visiting the financial institution, and a system for effecting the method. More particularly, the invention provides a fully-integrated and substantially-automated system and method for providing wholly-integrated account services over the Internet.

5           The system and method provide the ability to perform real-time or near real-time demand deposit account openings through the Internet. The Internet is used first to attract potential customers to the financial institution's site, where the potential customers can learn about the products offered by the financial institution. The potential customer applies on-line, providing personal  
10       information to the financial institution such as is necessary to determine whether or for which products the customer will be approved. An automated system acquires this predictive information, interacts with established credit and other databases, and dynamically approves or denies the customer's application for a demand deposit account product. The consumer can also be presented with a  
15       variety of products based on the customer's needs and qualifications.

          The invention also provides a method for automated funding of the account products chosen by the customer and for fulfillment support of the account products.

20           The invention has the advantage of attracting potential customers through channels previously unavailable to financial institutions. The invention also has the advantage of providing customers with a simple and flexible method of opening a new account consistent with other Internet-based transactions, without having to visit the financial institution of choice. Consequently, the pool of potential customers is not limited to those in the geographical area of the financial  
25       institution. Rather, any customer with access to the Internet can open an account.

          The invention also has the advantage of providing a real-time solution to the problem of opening accounts remotely and allows customers to open and fund an account in a short time over the Internet.

30           Other features and advantages of the invention will become apparent to those skilled in the art upon review of the following detailed description, claims, and drawings.

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Before one embodiment of the invention is explained in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other  
5   embodiments and of being practiced or being carried out in various ways. Also, it is understood that the phraseology and terminology used herein is for the purpose of description and should not be regarded as limiting. The use of "including" and "comprising" and variations thereof herein is meant to encompass the items listed thereafter and equivalents thereof as well as additional items.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A method and an apparatus embodying the invention are described herein.

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CLAIMS

What is claimed is:

- 5        1.        A method of remotely opening a demand deposit account with a  
financial institution, the method comprising:  
         providing a demand deposit account application to a customer via the  
Internet for the customer to complete;  
         receiving the application via the Internet;  
         processing the application through at least one filter to assess the risk to  
10       the financial institution of accepting the application;  
         establishing the demand deposit account electronically based on data  
provided in the application; and  
         transferring funds to the demand deposit account via the Internet.
- 15       2.        The method of claim 1, further comprising determining appropriate  
account offerings based on demographic data provided in the application.
- 20       3.        The method of claim 1, further comprising cross-selling products to  
the customer.
4.        The method of claim 1, further comprising allowing the customer  
to choose between offered account products.

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5. An automated system for remotely opening a demand deposit account with a financial institution, the system comprising:

a computer for hosting a remotely accessible demand deposit account application accessible to a customer;

5 an automated computer-based program stored in the system to assess the risk of accepting the application using data provided in the application;

an automated computer-based program stored in the system for establishing a demand deposit account using data provided in the application; and

10 a computer-based program stored in the system for transferring funds into the account via the Internet.

6. The system of claim 5, further comprising an automated computer-based program stored in the system for determining appropriate account offerings based on demographic data provided in the application.

15

7. The system of claim 5, further comprising an automated computer-based program stored in the system for cross-selling products to the customer.

8. The system of claim 5, further comprising an Internet-based selection scheme allowing the customer to choose between offered account products.

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ABSTRACT

The invention provides a fully-integrated and substantially-automated system and method for providing wholly-integrated account services over the Internet by which a consumer can establish a financial account electronically, without physically visiting the financial institution, and a system for effecting the method. The system and method provide the ability to perform real-time or near real-time demand deposit account openings through the Internet. The invention also provides a method for automated funding of the account products chosen by the customer and for fulfillment support of the account products.

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## 1. INTRODUCTION

### 1.1. Document Purpose

This document summarizes Phase I Internet Account Solutions (IAS) project activities from Initiation through Implementation. A detailed plan for the project is defined, consisting of:

- Project Overview
- Project Scope Definition
- Project Schedule and Milestones
- Project Organizational Structure
- Project Business Case

### 1.2. Project Background

With the formation of the new eFunds Corporation, Deluxe has publicly taken a position to become a service/product provider in the e-commerce industry. In so doing, it is imperative that we adopt the pace in which current "e-commerce savvy" companies develop and bring product to market. It is a requirement of the business environment in e-commerce that we move quickly to provide value added services to this industry by leveraging eFund's robust data sets and delivery channels.

The IAS project will leverage these data and delivery channels to provide end-to-end support for Internet account opening and internet commerce transactions. The IAS project will utilize the QualiFile and FraudFinder products to accommodate consumer authentication, demographic assessment, and product qualification for the account opening decisions. IAS will also leverage electronic check processing and verification engines that exist at eFunds-Tustin to accommodate check-based ACH funding of new accounts. IAS will also provide the ability for the customer to link to a batch check ordering function.

\*Target end-users for these products include internet commerce acceptance companies:

- Initial Targets Users (First 6-12 months)
  - ⇒ Cam FI's
  - ⇒ Internet-only Banks
- Secondary Target users
  - ⇒ Any USA Retail Bank
  - ⇒ Any USA Investment Services Company offering deposit-based services

### 1.3. Related Documents

Reference the following documents:

- I-DDA DB Gate 0 Presentation
- Internet SecureCheck Idea Assessment
- Internet SecureCheck Business Requirements
- NAS Idea Assessment
- NAS Project Charter
- NAS Requirements Model





## 2. PROJECT OVERVIEW

### 2.1. Project Introduction

This project is comprised of the analysis, design, development, and implementation of an internet-based application that will enable real time account opening and verification with funding settlement within 24 hours. ~~check based debit transactions for new account funding to be completed on line.~~ The application will interface with and utilize both the QualiFile and SecureCheck products in completing these functions. As part of the IAS project, the "back end" processes of QualiFile and SecureCheck will be integrated and delivered using NEON software tools. All current back end processes performed during a QualiFile, SecureCheck, and FraudFinder transaction will remain unchanged. The current functionality of these products is detailed below. The IAS product will also provide the ability for customer's utilizing the data stream solution to link consumers to a batch check ordering function.

#### QualiFile Product Functionality:

- Calculate the risk that an account will be closed for abuse at a later date, and deliver a recommendation on the action to take on a deposit account inquiry.
- Calculate the cross sell opportunity for additional debit and credit products for a consumer, by delivering a sales response (offer product x) based on credit score, and key demographic variables.

#### SecureCheck Product Functionality:

- Check based funding option allowing consumer to make opening deposits during internet account openings. The funds are transferred from the consumers checking account at their previous bank in to the client's custodial account using ACH transactions
- Robust transactional decisioning layer to include SCAN, PPS, and other proprietary data sources and analysis.

#### FraudFinder Product Functionality:

- Provides a score back on a consumer inquiry that indicates the fraud risk level involved with doing business with this individual.
- Identity authentication and predictive fraud modeling. Identify inconsistent, inaccurate and fraudulent information provided by the applicant.
- Ability to provide certain fraud attributes real-time (data stream only)



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### **2.2. Project Dependencies**

- Successful implementation of the NEON solution as part of the IDCC Project.
- Integration of NEON MQ Integrator tool with QualiFile and SecureCheck products within desired timeline of IAS project.
- Availability of NEON different Test, Q/A, Stage, and Production environments to be used during the IAS development process.
- Integration of NEONWeb tool into the IAS solution within the desired timeline of the IAS project.
- Stability of eFunds Platform and Support Structure (eFunds move to Phoenix)
- Creation of interface specifications by the IDCC project.
- Resource availability (particularly NEON, IDCC, mainframe, and Product Management).
- Timely agreement on the "look & feel" of the web presentation layer.
- Successful implementation of new Electronic Check host-to-host specification and protocol. Current target date for completion is mid-January 2000.
- Incorporating the results and lessons learned from the implementations and testing with Bank One and First Union.
- SecureCheck consumer relations support to be defined and delivered through SCAN processes.
- IDCC move to a client server environment. No infrastructure currently in place.



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## 2.4. Project Requirements

### 2.4.1. General Requirements

- The ability to deliver existing consumer decisioning functionality through the Internet.
- The ability to deliver existing SecureCheck functionality through the Internet.
- Develop a web presentation layer and interface to allow a FI to process an integrated account opening decision and an account funding transaction. (split presentation and interface)
- Use of the NEON software tools to allow trading partners to do business at electronic speeds.
- Ability to return an error message to the consumer when QualiFile/Secure Check is down
- Security (encryption) will be router-based. (SSL 3.0)
- Router, comm., and application layer security.
- Ability for customer to use a Deluxe or eFunds domain to access the product.
- Completion of all unit, integration, and end to end testing on the IAS solution prior to release.
- All components of the system must be Y2K compliant and certified.
- Ability to support a move to 24 X 7 for systems transactions and to move to extended hours customer support as needed.
- Ability to complete an account opening and funding using the primary and/or secondary signer information (customer specific).
- Ability to base the cross-sell product offers that result from the QualiFile transaction on from primary and secondary signer's data.
- Ability to perform multiple eFunds' product requests (QualiFile, SecureCheck) in a separate data package via a single communication link to eFunds. Ability to initiate Qualifile or SecureCheck transactions simultaneously or separately.
- Transaction times within each product should not exceed those currently experienced within the products today (i.e. Qualifile = 10 seconds, Electronic Check = 5 seconds). Does not include transaction time outside the eFunds IAS solution (customer to Deluxe).
- Ability to provide reporting and auditability on transactions passing through IAS.
- Development of an implementation plan for IAS. Definition of installation project management responsibility and hand off between sales and implementation.
- Development of a support process



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- Link to ChexSystems customer relations
- Defined billing process plan
- Make QualiFile and SecureCheck inquiry data available to the customer. Provide consumer data, inquiry response information, transaction date & time, and transaction error messages to FI.
- Ability to deliver credit and debit cross sell product offers to consumer for viewing with QualiFile response.

## 2.4.2. Web Requirements

### 2.4.2.1. User Interface

- Build IAS web screens for interface to the QualiFile and SecureCheck products.
- Ability to present banks logo on screen.
- Ability to display all QualiFile response data to the customer or consumer.
- Ability to display all SecureCheck response data to the customer or consumer.
- Ability to not display predefined pieces of data depending on the customer preference.
- Ability to preset denial screens.
- Ability to provide dynamic link (with consumer data) to current Check Order web site. Need to populate the Check Order screen with consumer data captured for QualiFile transaction
- Ability to re-display consumer-entered data for review and validation prior to submitting.

### 2.4.2.2. Validation and Routing

- Ability to capture/send a data stream containing all input data necessary to complete a QualiFile transaction.
- Ability to capture/send a data stream containing all input data necessary to complete an SecureCheck transaction.
- Ability to route an input data stream to the NEONweb tool.
- Ability to receive a response data stream from the NEONweb tool.
- Ability to handle data entry errors (i.e. format errors), technical errors.
- Option for single data stream or multiple data stream. Need to be able to take data in any format the customer wants.



### **2.4.3. NEONweb Requirements**

- Ability to receive an input data stream from the Deluxe web interface or the FI's web interface regardless of what thin client construction tools are selected (i.e. HTML, CGI, XML, COM, Bean, JAVA).
- Ability to recognize formatting errors (i.e. dash in SSN).
- Ability to route all published messages to the MQIN Queue.
- Ability to return all response messages to the Deluxe or FI's web interface.

### **2.4.4. NEON MQ Integrator Requirements**

- Ability to parse incoming messages from all of the publishers and then, based on content, transform and route the message to the appropriate output queues for delivery to the product.
- Ability to maintain generic data flows.
- Ability to integrate ChexSystems inquiry and response with QualiFile inquiry and response.

### **2.4.5. NEON Rules Repository Requirements**

- Ability to store generic routing and transformation rules as metadata in a relational database (i.e. if QualiFile is down, continue to fund the account using the information received from ChexSystems).
- Ability to centralize the operation and location of the business rules.
- Ability to format the product response data stream to the required format of the web presentation.

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### 2.5. Project Assumptions

- SecureCheck consumer relations support will to be delivered through the current SCAN processes.
- QualiFile consumer relations support will continue to be delivered through the current QualiFile process.
- IAS will leverage current QualiFile and SecureCheck billing systems. Each product will generate a separate customer invoice.
- NEON software tools will:
  - ⇒ Receive a transaction via the internet or other communications methods for processing.
  - ⇒ Determine the consumer communications option based upon the name of the calling transaction and receive the inquiry.
  - ⇒ Determine the inquiry's format and format for the reply based upon the name of the calling transaction.
  - ⇒ Change the inquiry format to one suitable for accessing OLA, QualiFile, and SecureCheck host to host
  - ⇒ Convert the QualiFile and SecureCheck response to the appropriate format for the customer.
  - ⇒ Return the response via the Internet to the customer.
- IAS will leverage current QualiFile and SecureCheck performance reporting functionality
- Current goal for completion of the IAS Phase I project is January 2000
- The key driver for this project will be schedule. In most cases it will take precedence over scope, quality, cost.
- QualiFile and SecureCheck, although taking place at the same sitting, are separate transactions. Upon approval of the new account opening, the SecureCheck's process will be called to transfer the required funds.
- The client will need to establish a process that will allow funds to be transferred (internally) from their custodial account into the consumer's new account.
- QualiFile application will continue to reside on the Shoreview mainframe.
- Application Verification Framework (AVF) project will not have an impact on IAS



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### 2.6. Project Scope

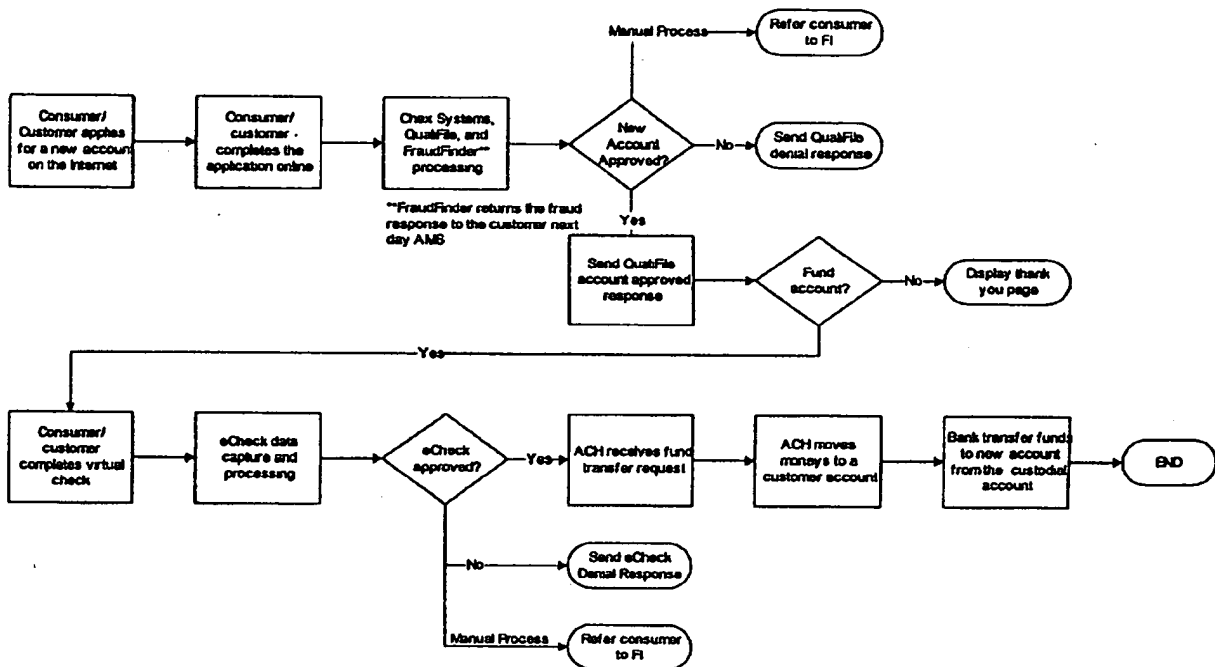
The scope of Phase I of the IAS project will include providing the QualiFile and SecureCheck product functionality to the IAS solution. This will include:

- Use QualiFile to accommodate consumer authentication, demographic assessment, and cross-sell qualification.
- Use the SecureCheck processing and verification engines that exist at eFunds-Tustin to accommodate check-based ACH funding of the new accounts. Functionality includes:
  - ⇒ MICR Conversion
  - ⇒ RDF (ACH Conversionable)
  - ⇒ Paper Payment Systems
  - ⇒ Min/Max Deposit
  - ⇒ Name/MICR Match (TBD if feasible)
- Develop a web presentation that will be used for delivery of the QualiFile and SecureCheck products within the IAS solution.
- Develop a web presentation for QualiFile for IAS functionality
- Develop a web presentation for SecureCheck for IAS functionality
- A link to the existing on-line Check Order page.



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## Customer Flow Diagram



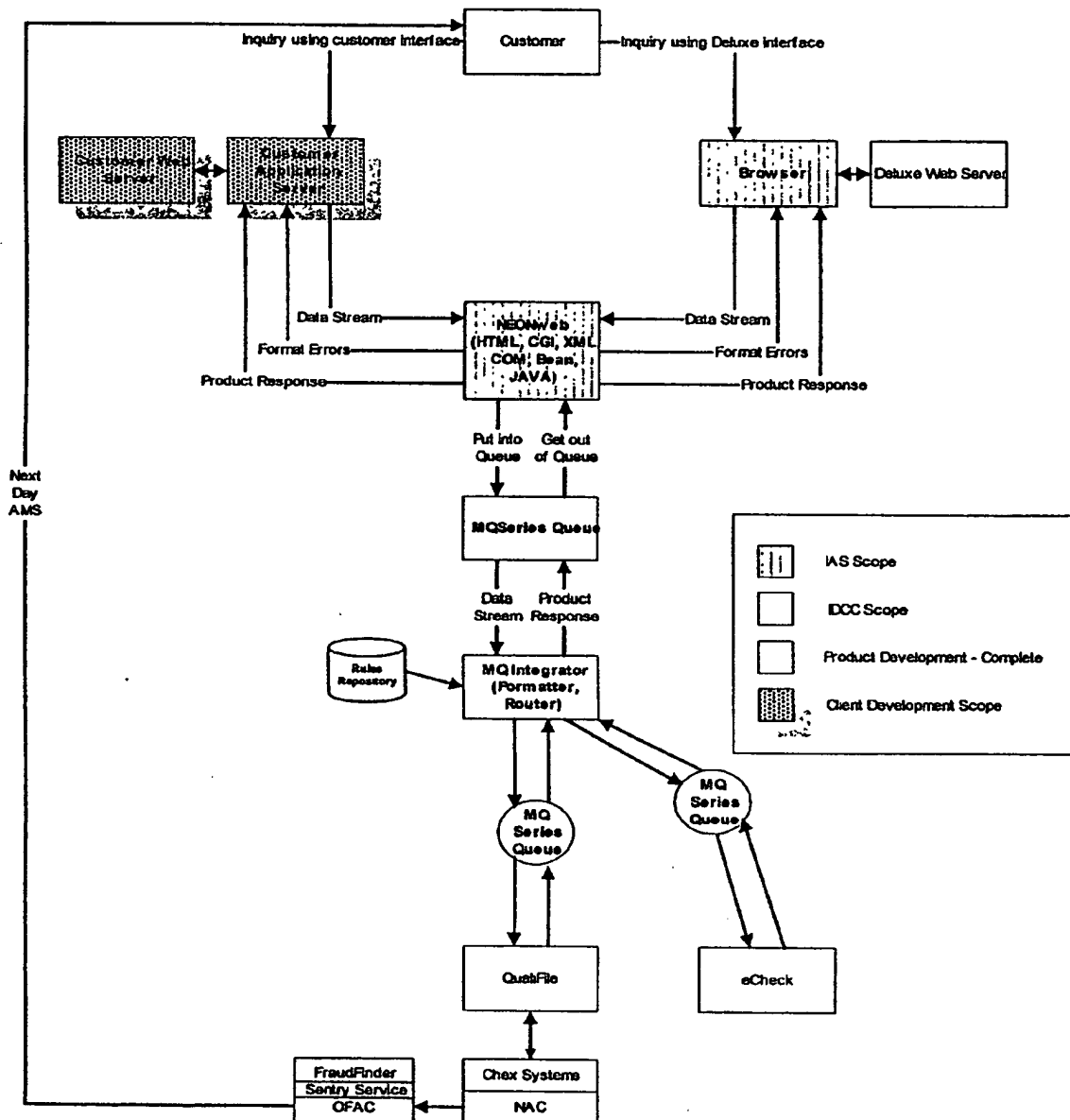




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IAS Process Flow Diagram

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### 2.7. Exclusions For Phase I

- IAS specific billing platform with joint QualiFile, SecureCheck, and FraudFinder invoice.
- Use of a Debit or Credit card to open a new account.
- Ability to accept a unique customer web interface layout. Need the required fields for QualiFile and SecureCheck transactions to be in specific positions for all web presentations for this phase. (This format requirement does not limit the thin client construction used by the customer; HTML, JAVA, CGI, COM, Bean.)
- Customer specific logic for integrating Chex and QualiFile responses to determine whether to proceed for funding or not. Will develop a generic set of criteria for Phase I
- Other eFunds products (DCI, etc.)
- Enhancements to QualiFile, SecureCheck, and FraudFinder existing functionality
- Ability to pass customer-specific data to the Check Order web-site
- Ability to perform multiple eFunds' product requests (QualiFile, eCheck) in single or separate data package via a single communication link to eFunds. Ability to initiate QF, eCheck, or FraudFinder transactions simultaneously or separately.
- Ability to return real time fraud responses through the web presentation
- Ability to pass check printing request to Deluxe Paper Payment Systems in a batch mode for all approved accounts with data sets that include Name, Address, and account number as required for customers utilizing the IAS web solution
- Ability to capture consumer accept/decline of cross sell product offers and return a product recommendation to the FI.
- Ability to handle joint/multiple signers.



## 2.8. Project Constraints/Issues

### Open Business Issues:

- Limited experience in this delivery channel
- Potential change in location of the eFunds data centers (for IDCC & QualiFile)
- No existing eFunds IT department

### Technical Issues/Constraints:

- Encryption levels (application to application, router to router)
- Web-to-web enabled transactions
- Number of environments NEON will use for development
- Outsourcing of Shoreview data center
- Transaction time performance unknown
- IAS success heavily dependent on the IDCC project and NEON software tools
- Transactions will be delivered to the products via the internet, not POS terminal.
- How billing will be supported for the SecureCheck product.
- Will need to expedite installation of a new line between Shoreview and Tustin as one is not currently in place. The line is needed to complete tests in the eFunds test environment.
- Disaster recovery plans for QualiFile set to begin after resolution of all issues and questions surrounding how the outsourcing of the Shoreview data center will move forward.
- Ability for Neon to duplicate ONE functionality.
- Relocation of eFunds data center to Milwaukee



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## Appendix A - Glossary

Term	Alias(es)	Definition
Automated Clearing House	ACH	Automated Clearing House was the original meaning, but has now come to mean any type of electronic transaction such as payroll direct deposit, automatic insurance premium deductions, loan payments, etc. An ACH transaction must be sent via an authorized medium using NACHA formatted files.
Corporate Account Managers	CAM	
Application Verification Framework	AVF	The AVF project will deliver an enterprise-wide closure & inquiry data and application foundation that will support multiple industries and applications.
Integrated Data Capture & Convert	IDCC	The IDCC project will deliver a messaging gateway, utilizing only one administrative system, that allows trading partners to connect to all Deluxe products and services
Debit Credit Issuance	DCI	The DCI project will provide the debit payment attribute summary about a customer. The product delivers uninterpreted data about an individual within DebitBureau
On-Line Access	OLA	The OLA application at ChexSystems performs a security code validation to determine if the customer is authorized for electronic access.
SecureCheck		Check based funding of client custodial account using ACH transactions.
Internet Account Solutions	IAS	Provides end-to-end support for internet DDA account opening and internet commerce transactions.
Integrated Data Capture and Convert	IDCC	A facility which can accept data in any form from any trading partner and transform, cleanse, edit and route it to any product per the products subscription requirement's.
Magnetic Ink Character Recognition.	MICR	The characters (numbers and symbols) on the bottom of a check that indicate the bank the check is drawn on, customer's account number, amount (if it has already been processed) and any additional information such as check serial number.
National Automated Clearing House Association.	NACHA	A national association formed to promote the use of ACH transactions. NACHA's primary roles are to set standards for ACH transactions, to promote growth in ACH transaction volumes and provide educational services to its members.
Primary Payment Systems, Inc.	PPS	A bank-owned, for-profit company, headquartered in Scottsdale, Arizona, that markets the Deposit Chek ®, Prime Pay ® and Prime Chek ® check verification services. The PPS database is a bank-contributed database containing information on



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		over 114 million consumer checking accounts.
QualiFile	NAS, New Account Score	A predictive decisioning tool for opening a DDA account. Calculates the risk associated with opening an account and identifies potential cross-sell opportunities
Regulation E	REG E	Reg E is the Federal Reserve Board of Governor's enactment of the Electronic Funds Transfer Act (EFTA). It contains regulations which prescribe the definitions, requirements, disclosures, liability and error resolution for electronically-initiated consumer transactions. ACH transactions fall under the rules of Reg E.
Shared Check Authorization Network	SCAN	Retail Indicator information is obtained from the nation's largest check verification company, Shared Check Authorization Network (SCAN). This indicates an individual may be attempting to write checks where previous debts have not been resolved. The individual has left unpaid checks outstanding drawn on one FI while trying to obtain an account at another FI without resolving the debt.
Shared Check Authorization Network On-Line	SCAN On-Line	Leading retail verification decisioning tool that measures the likelihood of return on check transactions. SCAN On-Line utilizes sophisticated neural net model routines combined with the nation's leading transactional data from the Deluxe DebitBureau to provide a fully robust decisioning tool for retail check verification.
New Era of Networks	NEON	Gateway product vendor.
Demand Deposit Account	DDA	Same as checking account. Check transactions fall under the regulation of Uniform Commercial Code Article 4, state law and Regulation CC.

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